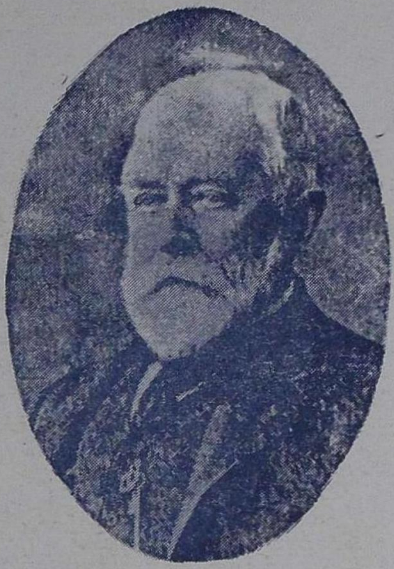
Bulletin of the Government Museum, Chennai

Stories in Stone : The Prehistory of Tamil Nadu

(IWA Endowment Lecture-6)



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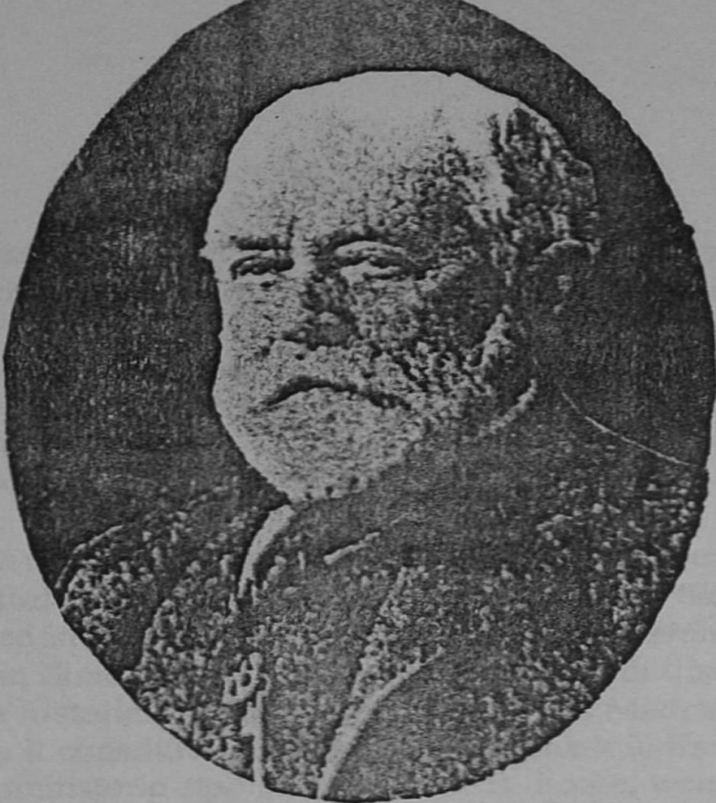

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11-09-2003

FOREWORD

The life of ancient man in India over thousands of years ago to the beginning of the historic period is depicted in the prehistory section of the Chennai museum by a wealth of artefacts characteristic of the stone, copper, or bronze and iron ages in succession. The world famous collections of Palaeolithic and Neolithic tools, ancient artefacts and other ritual objects of the early Iron age related with Urn burials and megaliths helps us in understanding the culture of the ancient South Indians. The Palaeolithic culture of South India is said to be approximately 1 million to 500,000 years old.

During this age man was mainly a hunter and food gatherer. They used the Stone tools for digging the fruits and vegetables found beneath the earth. In South India such tools have been obtained in numerous localities from beds of rivers Quartzite was the stone most commonly used in South India. The very first Paleolith discovered in India in 1863 AD by the eminent pre historian R.B.Foote belongs to this Madrasian type and is a unique display of this museum it constitutes the very first landmark in the prehistory of India. The find of the Pioneer of prehistoric studies in India, R.B. Foote, were catalogued in 1901 and these constitute the earliest of the museum collection of prehistoric and protohistoric Antiquities. They were acquired for Government Museum, Madras in the year 1904 by the then Government of Madras at a cost of Rupees 40,000/- and catalogued by Foote himself in 1914.

Today Dr.Shanti Pappu a renowned Pre-historic Archaeologist who has done a lot of research work on pre-history of South India has delivered a lecture on " Stories in stone: the Pre-history of Tamil Nadu" which reflects her hard work and untiring efforts to bring forth the ancient *Tamilagam* before us. This lecture is the sixth in the Series of "International Women's Association Endowment Lecture" which we have brought out as the bulletin of Chennai Government Museum.

We would like to place on record our thanks to the International Women's Association, which has created the Endowment Fund.

We are sure that this bulletin will be received well by historians and scholars.

R. Kannan

Commissioner.

Chennai - 600 008.

Title :

STORIES IN STONE : THE PREHISTORY OF TAMIL NADU

Text :

Dr. Shanti Pappu
Prehistoric Archaeologist,
Sharma Centre for Heritage Education

Dr. SHANTI PAPPU
(CURRICULAM VITAE)

Awarded the Professor H.D. Sankalia Memorial Gold Medal for standing first in the M.A examinations conducted at the College Post– Graduate and Research Institute, in 1991. Awarded the Justice Kashinath Trimbak Telang Prize for standing first in the M.A. Examinations ,in Archaeology from the University of Pune in 1991. She obtained the Junior Research fellowship and lectureship of the University Grant Commission in 1991 and obtained the UGC Senior Research Fellowship in 1993. She is the recipient of Homi Bhabha Fellowship for Research into prehistoric archaeology in Tamil Nadu (2000- 2002)). She was awarded the Charles Wallace Fellowship (Ancient India and Iran Trust) for Research at the University of Cambridge, U.K (Sep-Jan 2000) She published a book entitled " A Re-examination of the Palaeolithic Archaeological Record of Northern Tamil Nadu, South India. Oxford : BAR – International series 1003. She participated in many Seminars and Workshops both in India and Abroad and presented research articles. She delivered series of eight lectures on Prehistory to the M.A. Research Students of the Department of Ancient Indian History and Archaeology, University of Madras in February 1995. She delivered a lecture on Prehistory of Tamil Nadu at the Government Museum, Chennai in March 2002. She started the Children' Museum for Archaeology in India. Editing a Web Site for Indian heritage (Serindian): http;//www.serindian.com focusing on providing latest updates on ongoing research in Indian archaeology and associated sciences. She is conducting Independent excavations at the **Palaeolithic site of Attirampakkam,** Tiruvallur district, Northern Tamil Nadu, since March-April 1999. In collaboration with Prof. Maurice Taieb, Dr. Yanni Gunnell, Prof. jean-Philip Brugal, Dr. k. Anupama and Prof. R. Sukumar . Funded by Home Babe (2000 – 2002), Leakey Foundation (2002) Earthwatch (2003). This forms a part of the Palar Basin Research Project investigating prehistory and palaeoenvironments of Northern Tamil Nadu .She is the Consultant and Co-ordinator of the Department of Archaeology . Government of Tamil Nadu . for advice on issues related to excavations at the sites of Perur, Coimbatore and Mannargudi, Tirunelveli districts and forth coming excavations at Marakannam.

Acknowledgements

I thank Ms. Shobha Hebbar, for kindly inviting me to present the IWA Endowment Lecture. I am grateful to Dr. R. Kannan, IAS, for encouraging and aiding us in our projects. I thank Mr. Lakshminarayan, Mr. M Mohan and the staff of the Government Museum, Madras for all their help and cooperation. Research in Tamil Nadu has been possible by the kind cooperation of the Archaeological Survey of India, and the Department of Archaeology, Government of Tamil Nadu. I thank Shri A.V.K.Shetty for his kind support and help during excavations at Attirampakkam. I am grateful to my colleagues, Dr.Yanni Gunnell, Prof. Maurice Taieb, Prof. Jean-Philip Brugal, Dr. K. Anupama and Prof. Raman Sukumar. Mr. Kumar Akhilesh, as field-director of the Attirampakkam excavations provides invaluable help in lithic analysis. This work would not have possible without the encouragement and support of Mrs. R Pappu, Mr. V.R. Pappu, Ms. Gita and Sakunthala Sharma and Mr. Abhijit Ghosh. We are deeply grateful to the villagers of Poondi, Krishnaveram, Mandamedu for their help in excavations. Research has been funded at various times by the UGC, the Homi Bhabha Fellowships Council, Leakey Foundation and Earthwatch Institute.

Stories in Stone: The Prehistory of Tamil Nadu

Shanti Pappu
Sharma Centre for Heritage Education

> "If the academic study of prehistory can go any way towards enlarging and amplifying the range and quality of historical awareness, to make it easier for men of diverse cultural backgrounds to live together in amity without sacrificing their unique qualities, then it more than justifies its place in the curriculum of any university ...the significance of world prehistory is the contribution it is able to make to widening the perspectives of history in accord with the needs of today' [1].

Introduction

Nowhere is this idea more relevant than in India today. In a society torn by divisions of caste and creed, it is necessary to draw our attention to the common origins of all humanity, to the world of prehistory, where the first steps towards an awakening realization of the self, mind and nature began.

'Who am I?' Through the ages, this question of human identity, has been addressed by philosophers, spiritual and religious teachers and thinkers. It is also a question addressed by archaeologists who search for answers in the study of human origins and the evolution of the mind. India's ancient prehistoric past, ranging from the first hunter-gatherers to early farmers, is a vast period, often overshadowed by the greater 'glamour' of ancient monuments and grand civilizations. The story begins more than 2 million years ago, when Palaeolithic hunters and gatherers first chipped stone into tools, and ends around 3-4000 years ago, when settled village communities were firmly established.

[1] Clark, G.A. 1970. *Aspects of Prehistory*. University of California Press, Berkeley. pp.40.

Today, I wish to talk about the earliest phases of our prehistoric past-the Palaeolithic, or Stone Age; a period during which much of human evolution took place; resulting in what we are today. It is a phase when climatic changes transformed the face of the earth, with advancing and retreating sheets of ice, rising and falling sea levels and changing vegetation and fauna. In India, stone tools discarded and lost by these early hominids are proof of their existence, with only a few traces of fossils, wood and other perishable material. It is the task of prehistorians to piece together the puzzle that was their lives, using silent stones and bones, and evidence extracted from ancient soils, pollen and other fragmentary clues to past environments. The region which today, we call 'Tamil Nadu' has a wealth of sites dating back to this prehistoric past. It is this region that we will focus on and try to situate within the context of Indian prehistory as a whole.

What is Prehistory?

The idea of prehistory is only a few centuries old, and is linked to ideological struggles between existing religious beliefs, developments in geology and in concepts of time. In 1838, Boucher de Perthe, a customs controller in France, who collected antiquities as a hobby, made a startling discovery of what he called 'hâches diluviennes'. These were Palaeolithic tools discovered at a site called Abbeville in France. Few believed him. It was only in 1858 that geologists of France and England saw the tools themselves and in 1860, leading scholars accepted his finds. Subsequently the discovery of tools along with fossils of extinct animals convinced people that the antiquity of humanity was older and more complex than thought In 1836, a Danish antiquarian, C.J. Thomsen, classified finds of prehistoric tools into an evolving cultural sequence of artefacts of stone, bronze and iron; which he called the 'Three Age System'. By the 1870's, other scholars in France brought out new systems of classifying the Ice Ages, based on tool types, faunal remains and glacial periods[2]. These exiting discoveries had their impact on India, as we shall see below

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[2] Daniel, G E. 1975. *A Hundred and Fifty Years of Archaeology*, Duckworth, London

Of Climates, Fossils, Tools and Time

The Palaeolithic or Stone Age, is traditionally divided into three main phases, the Lower, Middle and Upper Palaeolithic, followed by the Mesolithic. In India, the Lower Palaeolithic ranges from >1 million years ago to around 125,000 years ago, the Middle Palaeolithic follows and continues to around 40,000 years ago, the Upper Palaeolithic extends to around 10,000 years ago, succeeded by the Mesolithic which ends around 3-4000 years ago. These phases are loosely based on the type of cultural material found, associated hominid species, and their chronological position in the time scale of evolution. This does not however imply that cultural phases fit into watertight compartments. Just as is seen today, with the co-existence of grinding stones and mixers, so tool transitions were gradual and overlapping. In many parts of the world, traces of the ancient hunting and gathering way of life still survive, and in some areas the knowledge of making tools of stone, bone and wood, points to the last of a dying tradition.

The period over which much of human evolution occurred is termed the Quaternary, a tiny slice of time, beginning around 2 million years ago. This chronological phase, is further divided into the Pleistocene which lasted till around 10,000 years ago; and which witnessed most of the dramatic changes of the Ice Ages; and the Holocene, a phase which we are still living through now. While ice sheets were expanding and contracting over much of the world, India witnessed fluctuations in monsoon patterns and sea levels. The peak of glacial periods were, in general, associated with increasing aridity and low sea levels, while the interglacials were marked by higher rainfall and advancing seas. By about 2 million years ago, the Himalayas had already been uplifted and much of modern India's mountains, hills and plateaus were already established. It is in her rivers, lakes, floodplains, deserts, and coastal areas that the maximum changes were witnessed, all of which had an impact on early human life ways

The term 'hominid' refers to members of the family of humans, *Hominidae*. Recent studies show that the divergence of humans from apes was as recent as perhaps 5-10 million years ago In South Asia, finds such as that of Ramapithecus excited a lot of attention as being early hominids, till later research allied them closely with orangutans. The story of our ancestors can be traced back to a little cranium called Toumai (*Sahelanthropus tchadensis)* found in Chad and dated to around 6 and 7 million years old, and which is the oldest known hominid or near-hominid. Other fossils *Ororin tugenesis, Ardipithecus ramidus*, point to various stages along the evolutionary tree. The ancestors most relevant to the study of prehistory are however the Australopithecines found in Africa and dated to around 4.4 million years ago. They had ape like faces, small cranial capacities of around 375-550 cc and walked erect. The most complete skeleton, found at Hadar, in East Africa, and nicknamed 'Lucy', was a female, only around 3' tall, and whose post-cranial skeleton proved for the first time that this species walked erect. Footprints of Australopithecines preserved in a volcanic ash deposit at Laeotoli in Africa, were further proof that these early hominids, waked erect. This was a significant development in human evolution, which left hands free to manipulate objects; and which also had implications in terms of thermoregulation of the body, mobility and diet patterns. The first tools appear on the scene around 2 million years ago, and were made by the 'handy man' or *Homo habilis*. Their simple stone tools called 'Oldowan', after the famous site of Olduvai in the African Rift Valley, were made by striking one stone, known as a core, with another known as a hammerstone. Cut marks on bones show that they were using these to reach at bone marrow, a large source of energy. From 1 8 million years to around 300,000 years ago, *Homo erectus*, spread out of Africa, over Europe, and Asia. Their tools belong to a cultural period called the Lower Palaeolithic and consist of handaxes, cleavers, choppers and scrapers. With a larger brain capacity of 750 and 1225 cc, there is evidence that *erectus* probably used fire, and their stone tools are more sophisticated than those of *habilis*. The first archaic forms of *Homo sapiens* appear 500,000 years ago. The brain size is larger than *erectus* and smaller than most modern humans, averaging about 1200 cc. Around 230,000 years ago, the Neanderthals (*Homo sapiens neanderthalensis*) are found all

over Europe, West Asia, North Africa and Central Asia. They made tools associated with Middle Palaeolithic cultures. The average brain size is slightly larger than that of modern humans, about 1450 cc. Neanderthals mostly lived in cold climates, and their body proportions are similar to those of modern cold-adapted peoples. They buried their dead, the oldest known burial site being about 100,000 years old.

Modem forms of *Homo sapiens* first appear about 120,000 years ago, and in some cases much earlier. There is evidence of the co-existence of anatomically modern humans and Neanderthals in West Asia. Modem humans have an average brain size of about 1350 cc. About 40,000 years ago, Cro Magnons appear in Europe. They are associated with Upper Palaeolithic tool kits, clothing, fine figurines, music, rock art, burials and shelters. Modem humans, *Homo sapiens sapiens*, of the Mesolithic had more robust face, jaws and teeth than we do today.

The picture of fossil hominids in India, is quite dismal[3]. Till date, the only fossil cranium found is that of the 'Narmada Man', discovered at Hathnora in Madhya Pradesh. This partial cranium, is now assigned to an archaic form of *Homo sapiens*, and recent research points to the fact that it may indeed represent a female. Fossils of *Homo sapiens* are found from Sri Lanka dating to around 30,000 years ago. From around 10,000 years ago, fossils of Mesolithic hunter-gatherers are found in many sites in India, including those from burials. Recently, the discovery of a possible cranium embedded within a lateritic block near Pondicherry, is exciting and needs further study.

Tamil Nadu and the Birth of Prehistory

In India, the science of prehistory was established with discoveries made by the British geologist Robert Bruce Foote (1836-1912). Foote began his career in the Geological Survey of India in 1858 and worked for the most part in South India[4]. He was inspired by discoveries of stone tools being made in Europe, and this knowledge

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[3] Kennedy, K A.R. 2000. God-Apes and Fossil Men. Palaeoanthropology in South Asia. The University of Michigan Press, Ann Arbor.

[4] Chakrabarti, D.K. 1979. 'Robert Bruce Foote and Indian prehistory', *East and West*(N.S), vol. 29, no.1, pp. 11-26.

aided him in identifying pieces of 'stone' at Pallaveram, near Chennai, as being ancient stone tools. This pioneering discovery made in May 1863[5], led to the conclusive establishment of human antiquity in India. Among over 450 sites discovered by him in the next three decades in various parts of Peninsular India, a large number fall in river basins of Tamil Nadu. Foote was also the first to discover tiny tools called microliths in the red 'teri' sand dunes of southern Tamil Nadu, which were later recognized to belong to the Mesolithic. The importance of his work lies in the fact that in addition to discovering and documenting sites, he made a conscious attempt to integrate diverse kinds of evidence to arrive at a comprehensive picture of prehistoric lifeways in this region Foote was only one among a group of enthusiastic amateurs; geologists, scientists, and interested individuals who proceeded to discover sites and fossils all over the Subcontinent.[6]

However by the 1920's, the spectacular discoveries in the Indus Valley turned attention away from simple stone tools to the grandeur of the Harappan civilization. For almost a decade, prehistoric research remained largely stagnant.

Linking India: From the Soan to the Kortallayar

The turning point in Indian prehistory, came in 1930. L.A. Cammiade along with M.C. Burkitt[7], attempted to put together finds of tools along the southeast coast, (in modern Andhra Pradesh), into a sequence showing the evolution of cultures through time, in relation to changing climates. This was the first attempt to classify finds into different culture sequences; ranging from Series I (Lower Palaeolithic) to Series IV (Mesolithic) Meanwhile in the northwest, a team from Yale and Cambridge, including Helmut de Terra and T.T. Paterson[8] coordinated a project to put together a

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[5] Foote. R.B. 1866, 'On the occurrence of stone implements in lateritic formations in various parts of the Madras and North Arcot districts', *Madras Journal of Literature and Science*. 3rd.series Part II. pp. 1-35. with an appendix by William King. pp 36-42.

[6] Paddayya. K. 1995b, 'Theoretical perspectives in Indian archaeology: an historical review', in *Theory in Archaeology: A World Perspective*, ed. P.J. Ucko. Routledge, London, pp. 110-149.

[7] Cammiade, L.A. & Burkitt, M.C. 1930, 'Fresh light on the stone ages of Southeast India', *Antiquity*, vol 4. pp.327-339

[8] de Terra, H & Paterson, T.T. 1939, *Studies on the Ice Age in India and Associated Human Cultures*, Carnegie Institution of Washington Publication No. 493, Washington.

culture sequence in relation to climatic changes in the Soan river valley (in modem Pakistan). Soon after they shifted their attention to the Narmada basin, and then further south.

In the basin of the river Kortallayar, in Tamil Nadu, T.T. Paterson[9], along with V.D. Krishnaswami[10], identified Lower, Middle and Upper Palaeolithic assemblages buried within ancient sands, silts and clays of old terraces of the river. They correlated these with sequences across the Subcontinent. Two 'cultural' traditions of the Indian Lower Palaeolithic were identified. The Soanian, is distributed over much of northwestern India and Pakistan and comprises simple choppers and chopping tools on pebbles and large flakes. The Acheulian, extending over the rest of India, is characterized by handaxes, cleavers and other tools of greater sophistication. It is still unclear as to whether these represent different 'cultures' or expressions of different ways of exploiting the environment. In the south, the Acheulian industries found in Tamil Nadu, were called the 'Madras Handaxe Tradition', and soon became the reference point for studies of much of India's Lower Paleolithic assemblages. These early studies, put together the first comprehensive picture of Indian Prehistory and stood the test of time till recent research challenged many of their ideas.

Prehistory Today

From the 1960's onwards, H.D. Sankalia[11] of the Deccan College, and his students worked on prehistoric sites all over the country, building up a more refined picture of Indian prehistory. Their work was supplemented by scholars from the Universities of Allahabad, Baroda, Calcutta, Delhi and Chandigarh. Studies of past landscapes

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[9] Paterson. T.T. 1939. 'Stratigraphic and typologic sequence of the Madras Palaeolithic Industries', in *Studies on the Ice Age in India and Associated Human Cultures*, eds H de Terra. & T.T. Paterson. Carnegie Institution of Washington Publication No. 493, Washington, pp. 327-330.

[10] Krishnaswami. V D. 1938a. 'Environmental and cultural changes of Prehistoric man near Madras', *Journal of the Madras Geographic Association*, vol. 13, pp. 58-90.

1938b. 'Prehistoric Man Around Madras'. *Indian Academy of Sciences, Madras Meeting*, vol 3, pp.32-35.

1940. 'Discussion of laterite', *Proceedings of the 27th Indian Science Congress*, vol. IV, pp 78-80.

1947. 'Stone Age India', *Ancient India*, vol. 3, pp 11-57.

1953. 'Progress in Prehistory', *Ancient India*, vol. 9, pp.53-79.

[11] Sankalia. H.D. 1974. *Prehistory and Protohistory of India and Pakistan*, Deccan College, Pune.

and climatic changes began to acquire new degrees of sophistication and gradually collaborations with scientists from varied disciplines-palaeontology, palaeobotany, geomorphology and geochronology emerged. Revolutions in scientific dating methods, in particular that of radiocarbon, U/Th, and K/Ar and TL dating, pushed back the antiquity of the Palaeolithic in India. At the same time, there was a growing realization that studies of Indian tribes and castes could form a vital source in informing on lifeways of hunter-gatherers or early farming communities. Thus the branch of ethnoarchaeology was born[12].

Once again the basin of the river Kortallayar drew the attention of prehistorians From 1957 to 1979, excavations were conducted by K.D. Banerjee of the Archaeological Survey of India[13], at Gudiyam, Attirampakkam, Vadamadurai, Poondi and Neyvelli. Further work was conducted by Swami[14] who synthesized the work of previous scholars and discovered new sites. Scholars such as K.V. Soundara Rajan[15], K.V. Raman[16], F.E. Zeuner, B. Allchin[17], and R. Gardner[18], discovered numerous prehistoric sites, and this work of discovery is still being continued by staff and students of the Madras University, Department of Archaeology, Government of Tamil Nadu, Tamil University, Tanjore, among others

New Developments in the Prehistory of Tamil Nadu

Although the prehistory of Tamil Nadu, appears to have been studied intensively, the total volume of published literature (post 19th c), does not perhaps exceed more than a 100 pages! By the early 1990's it was clear that prehistoric populations lived here for more than a million years, and left behind stone tools belonging to different

[12] Paddayya, K. 1995b. 'Theoretical perspectives in Indian archaeology: an historical review', in *Theory in Archaeology: A World Perspective*, ed. P J. Ucko, Routledge, London, pp. 110-149.

[13] (I A R. 1962-63, 1963-64, 1964-65, 1966-67)

[14] Swami A 1976. *Archaeology of the Chinglepat District (Prehistoric Period)*. Unpublished Ph D Dissertation, University of Madras, Madras.

[15] Soundara Rajan K.V. 1966, *Prehistoric and Protohistoric Madras*. Unpublished Document, Deccan College, Pune

[16] Raman K.V. 1959, *The Early History of the Madras Region*, National Art Press, Madras.

[17] Zeuner, F.E & Allchin, B. 1956, 'The Microlithic sites of the Tinnevelly district, Madras state', *Ancient India*, vol.12, pp.4-20.

[18] Gardner, R A M , & Martingell, H. 1990, 'Microlithic sites and their palaeoenvironmental setting, Southeast India: A re-evaluation', *Geoarchaeology*, vol. 5, no.1, pp. 1-13.

Lower, Middle and Upper Paleolithic and Mesolithic cultural phases; that their tools were buried within laterites or red soils and gravels, or red sand dunes; and that changes in the climate, sea levels; and in the course of rivers, buried many of these tools and influenced settlement and subsistence patterns.

However, at this point in time, no methods were used to date these deposits or to build up more accurate pictures of past environmental changes. World over, new theoretical and methodological approaches were being used in the study of the Paleolithic. A new look at the nature of the archaeological record in this region, in the light of these developments was thus required. A re-examination of the prehistoric archaeology of this region was initiated by the author in 1991[19], and this research has now expanded to include a multidisciplinary team of scholars[20] from all over the world, who are looking into early human behaviour and climatic changes in this region. This project aims at investigating the Palaeolithic archaeology of the Palar river basin, focusing on documentation of sites, their stratigraphy, past environments, the age of different deposits in order to propose some models of past hominid behaviour.

The Earliest Occupation of Tamil Nadu

The earliest industries in India, belong to a period in the Lower Palaeolithic called the Acheulian. Elsewhere, this phase is associated with early hominids belonging to the species *Homo erectus*, discussed earlier. Chronometric dates have pushed back the age of the Lower Palaeolithic to >150 to >350 kyr. Dates in the Riwat area of Pakistan may even exceed 2 myr, while those from Hunsgi, in Karnataka point to these hominids living around 1 myr years ago[21].

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[19] Pappu, S. 2001. *A Re-examination of the Palaeolithic Archaeological Record of Northern Tamil Nadu, South India*. Oxford: BAR-International Series 1003.

[20] The Palar Basin Research Project with: M. Taieb, Y. Gunnell, J-P. Brugal, K. Anupama, R. Sukumar, Kumar Akhilesh and others.

[21] Petraglia, M D. 1998. 'The Lower Palaeolithic of India and its bearing on the Asian record', in *Early Human Behaviour in Global Context. The Rise and Diversity of the Lower Palaeolithic Record*, eds. M.D. Petraglia & R. Korisettar, Routledge, London, pp. 343-390.

These hominids occupied almost all parts of India. In the arid wastes of the Thar desert, they camped around small seasonal streams and shallow water pans. Along the banks of the mighty Narmada, in the river valleys of Central India, in the rock shelters of Adamgarh, Bhimbetka, along the banks of the Godavari, Krishna, Palar, Kortallayar and their tributaries, in the heights of the Eastern Ghats, in the inland valley of Hunsgi; lie traces of ancient occupation. Very recently, such tools have even been found in the heart of the Himalayas in Nepal. Possible Lower Palaeolithic tools have also been found in the North-East and Kerala.

When ice sheets spread across much of Northern Eurasia and America, India was hit by fluctuations in monsoon levels, and sea level changes. The Thar desert was wetter and cooler, sea levels varied, rivers flowed along courses which differ from those seen today and vegetation patterns fluctuated between woodland and savanna ecosystems. Fossils of wild boar, horse, elephants and hippopotamus among others, point to both forested and open environments[22].

In Tamil Nadu, Acheulian sites lie concentrated in the Palar river basin, a fact probably owing to the absence of suitable raw material for making tools, further south. These sites are either deeply buried with lateritic red soils or gravels or erode out onto the surface. Satellite images and field work confirm that the river Palar once flowed along the course of the modern river Kortallayar, before it shifted further south.[23] The best evidence comes from our recent excavations at the site of Attirampakkam (1999-2003).

Investigated for over a century, Attirampakkam forms one of the classic sites in the history of Indian Palaeolithic archaeology. Discovered by the British geologist,

[22] Misra. V.N. 1989, 'Stone Age India: an ecological perspective', *Man and Environment*, vol. XIV, no.1, pp. 17-64.

[23] Ramasamy. S.M., V. Venkatasubramaniam, S. Riaz Abdullah, and S. Balaji 1992. The Phenomenon of River Migration in Northern *Tamil Nadu-Evidence from Satellite Data*. Archaeology and Tamil Literature. *Man and Environment* XVIII(1): 13-26.

Robert Bruce Foote in 1863, it was sporadically investigated for over a century[24]. At present, gullies and rain rills erode tools over an area of around 50,000 m^2.

Our ongoing excavations (1999-2002), aim at establishing the nature of hominid activities at the site, the environmental context of the site, and the age of the assemblages. These discoveries will be situated within the broader regional setting and will contribute towards the study of early hominid behaviour during the Middle and Late Pleistocene in South Asia. The site was mapped (contour intervals of 1 m), and an area of 207 m^2 was excavated.

Excavations revealed a multicultural site with stratified Lower, Middle and Upper Palaeolithic deposits in well-preserved primary contexts. Thousands of tools of Lower Palaeolithic Acheulian hominids were found deeply buried within beds of laminated clay, indicating a possible lagoonal/swamy environment close to the palaeo-Kortallayar. Below the clay beds, tools were also found in sandy-clayey deposits, indicating a possible near-shore environment.

Acheulian artefacts were largely made on a hard rock called quartzite. Quartzite pebbles and cobbles are available within a few kilometers of the site. Their tool kit was made up mainly of handaxes, in addition to a few cleavers, scrapers, and other heavy-duty flake tools. The predominance of finished tools with little evidence of flakes, chips and cores indicating manufacturing activities is very significant. These hominids were clearly making tools elsewhere, anticipating their use at the site and then transporting them over several kilometers to be used here. This fact goes well with the ecological data pointing to swampy mudflats; and with evidence from modern game sanctuaries and other similar sites in Africa and West Asia. Here, hominids camped a little away from swamps, lagoons and mud-flats but used them to hunt animals gathering around waterholes, or stuck in swamps; to scavenge off

[24] Pappu. S.,Yanni Gunnell, Maurice Taieb. Jean-Philippe Brugal, Yannick Touchard) Ongoing Excavations at the Palaeolithic Site of Attirampakkam. South India: Preliminary Findings. *Current Anthropology*, in press

carcasses, to dig roots and tubers, or to exploit mollusk and other marine and aquatic resources.

At a depth of 3.6 m below the surface, an Acheulian living floor was exposed; with large boulder cores, artefacts and debitage in association with a set of animal footprints, the first of their kind to be documented in South Asia. These comprise a set of 17 round impressions (diameter of 15-20 cm) and a set of hoof-prints, which are under study. Fossil teeth of *bovid* sp., shell impressions, fossil wood and root casts are the only organic evidence, which has survived the ravages of time. Samples for studying past pollen and siliceous plant bodies called phytoliths are under way, and will tell us more about past vegetation patterns.

We know too little about other aspects of their life. We do know that manufacturing handaxes is a skilled process. The unique bifacial symmetry of these tools provides clues to their powers of cognition and planning, and use of symbols and even hints at rudimentary language skills. In other parts of India, Acheulian hominids did bring quartz crystals to sites at Didwana and Bhimbetka, they engraved mysterious cup-marks in Central Indian rock shelters, and carried pieces of haematite, used for religious and medicinal reasons by later people, to sites in Hunsgi.

Seasonality in climate, meant that mobility was possibly very high. Our ongoing research is addressing questions related to population size, group structure and mobility patterns. We are also using palaeomagnetic, Uranium/Thorium, Electron spin resonance, and other dating methods to be able to assign ages to these Lower Palaeolithic traditions.

An expanding mind: The Middle Palaeolithic

Around 200,000 years ago, Neanderthals occupied much of Europe, West Asia, North Africa and parts of Central Asia. Elsewhere in Africa and parts of Asia, the first archaic *Homo sapiens* were noted, associated with greater sophistication in lithic technology during a phase called the Middle Palaeolithic. In India, the first sites date to around 125,000 years ago. Middle Palaeolithic technology marks a slow evolution from the Acheulian. Handaxes continue, but in a smaller more diminutive

form. During the Middle Palaeolithic, there was an increase in sophistication in tool technology. People realised that if cores were carefully prepared, they could knock off flakes having the size and shape they wanted. This is called the 'Levallois' technique after a site in France where it was first discovered. Tools were now largely made on flakes and long elegant blade-like flakes. Their edges were carefully retouched and made into scrapers, borers and points. Some points could possibly have even been used as projectiles or spearheads. They now began to use rocks of a very good quality such as chert and agate. In some cases, the hominids of Samnapur in Madhya Pradesh and Sojat in Rajasthan travelled many miles searching for good quality raw material[25].

In Tamil Nadu, climatic changes, led to the burial of clays and laterites under deposits of red gravels laid down by small braided streams. A new landscape slowly evolved with shifts in the course of the river Kortallayar. Pebbles and cobbles suitable for making tools were available everywhere, and almost every site shows some evidence of tool manufacture. While the Levallois technique is noted, handaxes do continue. Reuse of older tools and the use of even simple natural pieces are notable. Not only is there an apparent expansion in the number of sites, but for the first time rock shelters such as Gudiyam began to be occupied. Studies of variability in tool kits across the region suggests a model of dry-season aggregation near the river, and wet-season dispersion into the hills and plateaus.

At Attirampakkam, the clays with Acheulian tools, were rapidly buried under ferrugionous gravel beds (upto 1 m thick), containing Middle Palaeolithic artefacts. A tooth of an ancient horse, *Equus* sp. was recovered as well. We are still investigating these interesting deposits, and more information will soon be available on this phase.

Growth in self-Awareness: The Upper Palaeolithic

Around 30,000 years ago, there was a sudden enormous expansion of creativity and innovation. New technology and tool industries, burials, habitation sites, and

[25] Misra, V.N. 1989, 'Stone Age India: an ecological perspective', *Man and Environment*, vol. XIV, no.1, pp. 17-64.

wonderful engravings, figurines and rock art appeared. This phase was marked by the appearance of Cro-Magnons in Europe and modern humans in Africa and Asia.

Over most of India, this phase is marked by a very arid climate. Rivers dried up and strong winds blew, building up sand dunes in Rajasthan and Gujarat. Major rivers like the Godavari and Krishna were reduced in size and strength. Vegetation was sparse Ostriches, birds associated with a dry climate, roamed over Rajasthan, Maharashtra and Madhya Pradesh. Aridity was no great obstacle to the intrepid Upper Palaeolithic groups. From the sand dunes of Rajasthan, to the uplands of Bengal, and from the plains of the Ganges to the banks of the tiny streams of Renigunta in Andhra Pradesh, evidence of this phase has been found. In the Kurnool caves of Andhra Pradesh, fossil fauna of antelopes, gazelles, langurs and even rhino were found and possibly the climate was more humid in this part of India.

For the first time, a large number of tools were made on long thin blades. A single core could now be used to peel or strike off a number of blades, a strategy both efficient and which could conserve raw material. Blades could be trimmed into different shapes and made into many tools to be used for hunting and gathering and exploiting aquatic resources. A remarkable feature is the presence of many stones with holes bored into the center. Similar stones are used today by the Yanadi to catch fish, and it is very possible that Upper Palaeolithic folk exploited fish and other aquatic creatures. Grinding stones, not very different from what our villagers use today, tell us that they must have ground seeds or even wild rice. Some tools may even have been used for harvesting wild grains[26]. We know a good deal more about what they believed in. In Central and Western India, ostrich shells were made into beads, engraved on or probably used as receptacles; tantalizing facts pointing to a rich and exotic material culture. At the site of Baghor, in the Son valley in Central India, a curious triangular stone with concentric circles resembles modern shrines dedicated to the mother goddess, and makes one wonder about the antiquity of folk

[26] Misra. V.N. 1989. 'Stone Age India: an ecological perspective', *Man and Environment*, vol. XIV, no.1, pp. 17-64.

beliefs in modern India. Many of the rock paintings in the caves of Central India, were made by these people.

In Tamil Nadu, such sites are found scattered over the Palar basin, and even further south. The first evidence of such a site in a stratified context, showing its relationship with earlier deposits and those following, is at Attirampakkam. Here, tools were made on very fine grained quartzites and comprise tools, cores and manufacturing waste. Upper Palaeolithic hominids were making tools at the site and using them here as well. Possible post-holes, a hoof impression and root casts are other meager traces of associated finds

Creativity unleashed: The Mesolithic

Around 10,000 years ago, Mesolithic hunter-gatherers spread rapidly out over the Subcontinent. Makers of tiny tools called microliths, it is these modern humans who have left behind a wealth of evidence of their art, burials, settlements and tools in India Their tools are found in caves and rock shelters in Central and South India, the Vindhyan hills and the Eastern Ghats, lakes of Gujarat and Rajasthan, dune sands of the Thar, the red sand dune 'Teris' of Tamil Nadu, the Western coasts, the ox-bow lakes of the Ganga plains and other diverse environmental zones. This phase marked by greater humidity and a considerable body of information on past vegetation and fauna is now available.

This phase is marked by the distinctive stone tool technology-the *Microlithic*. For the first time, tiny 'micro' tools of only a few centimeters in size were made on fine-grained raw materials. Blades, burins, lunates, crescents, triangles and many more such tools were now hafted onto bone or wooden hafts to form composite tools. In the hundreds of Mesolithic rock paintings, in Central India and elsewhere, these tiny microliths are shown, hafted onto handles, to form arrows, spears and sickles.

This was the period when the first steps towards domestication occurred. At Bagor, in Rajasthan, bones of domesticated sheep and goat, are dated to around the 5th century B.C , Grinding stones, practically indistinguishable from those used in modern villages, occur at most sites. Ring-stones, found at many sites, were possibly

used for primitive cultivation or fishing. Bones of deer, buffalo, gaur, fox, jackal, and humped cattle were a few of the species exploited by them, not to mention a wealth of marine and aquatic fauna.

Human burials from the site of Langhnaj, in Gujarat; and from numerous sites in the Ganga valley, show us skeletons interred with offerings of stone and bone tools, haematite and meat, to last them through their long journey to the other world. During later phases, Mesolithic communities traded with the Harappans, whose copper arrowheads are recorded from the Mesolithic layers at Bagor.

One of the best sources of information on this period, is what great artists of the past left behind: their rock art These fascinating images, show people hunting game, gathering plant resources, trapping animals, having a meal together, dancing and playing instruments.

In Tamil Nadu, Mesolithic sites are distributed all over the state[27]. The most famous sites are located buried within the red sand dunes, 'teri's' along the south-east coastal belt. These industries were first discovered by R.B. Foote, and later termed the 'Teri Tinnelvelly Industry' by Zeuner and Allchin[28] who worked here in the 1950's. These industries date back to 4000 years ago and may even extend to as old as 16,000 years ago[29]. Tools are tiny microliths made on chert, chalcedony and even on fossil wood. A wide range of techniques for detachment of these tools existed, most of which require tremendous skill and are a challenge even to modern flint knappers. The environment for these people included a well-vegetated land surface, close to lagoons and the sea, ideal for fishing and exploiting other coastal resources. These assemblages are very closely related to similar sites in Sri Lanka This is not very surprising, considering the fact that sea levels were low several times during the Late Quaternary and could have allowed easy movement of people and fauna.

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[27] Selvakumar, V (1996), *Investigations into the Prehistoric and Protohistoric Cultures of the Upper Gundar basin, Madurai district, Tamil Nadu,* Unpublished Ph.D. Disseration, Pune Deccan College.

[28] Zeuner, F.E & Allchin, B. 1956, 'The Microlithic sites of the Tinnevelly district, Madras state', *Ancient India*, vol.12, pp.4-20.

[29] Gardner, R A M., & Martingell, H. 1990, 'Microlithic sites and their palaeoenvironmental setting, Southeast India: A re-evaluation', *Geoarchaeology,* vol. 5, no.1, pp. 1-13.

In the Palar river basin, tiny microliths made on very fine grained quartzites point to the enormous skill exercised over the properties of stone. These sites are particularly interesting in so far, as the deposition of these red sandy beaches is closely linked to sea level changes along the coast of Tamil Nadu. Recently, many more sites have been found near Pondicherry in similar contexts. We know very little of this phase in Tamil Nadu, and more studies are needed focusing on this phase of research.

From the Present to the Past: Ethnoarchaeology

The Irulas, Chenchus, Yanadis, Yerukulas, Paliyans and many other tribes of South India, possess some vestiges of a hunting-gathering mode of life. Ethnoarchaeological studies with the Irula hunter-gatherers inhabiting the Kortallayar river basin, and studies of many other Indian tribal groups and Sri Lankan foragers, provided a wealth of information on this fast-vanishing mode of life[30]. In spite of the criticism of utilizing data drawn from modern largely 'acculturated' hunter-gatherers for understanding hominid behaviour, it is felt that the long continuation of this foraging mode of life does enable one to use some general principles to understand past lifeways. New ideas on ways in which the landscape is utilized, patterns of mobility and subsistence and even modern use of stone to cut trees and butcher animals is a valuable source of analogies for any prehistorian. It is also an eye-opener, bringing the scholar into close contact with the hardships undergone by these tribes today.

The Future of the Past

This paper, puts forward a brief review of the prehistory of Tamil Nadu. It is brief, not only to summarise technical information, but also owing to the fact that there really is not much information available! Our ongoing project in the Palar river basin, is steadily building up a wealth of information on the archaeology,

[30] Pappu, S 2003.'Down ancient trails: hunter-gatherers in Indian archaeology', in *Hunter-gatherers in history, archaeology and anthropology*, ed. Alan Barnard, Berg, in press.

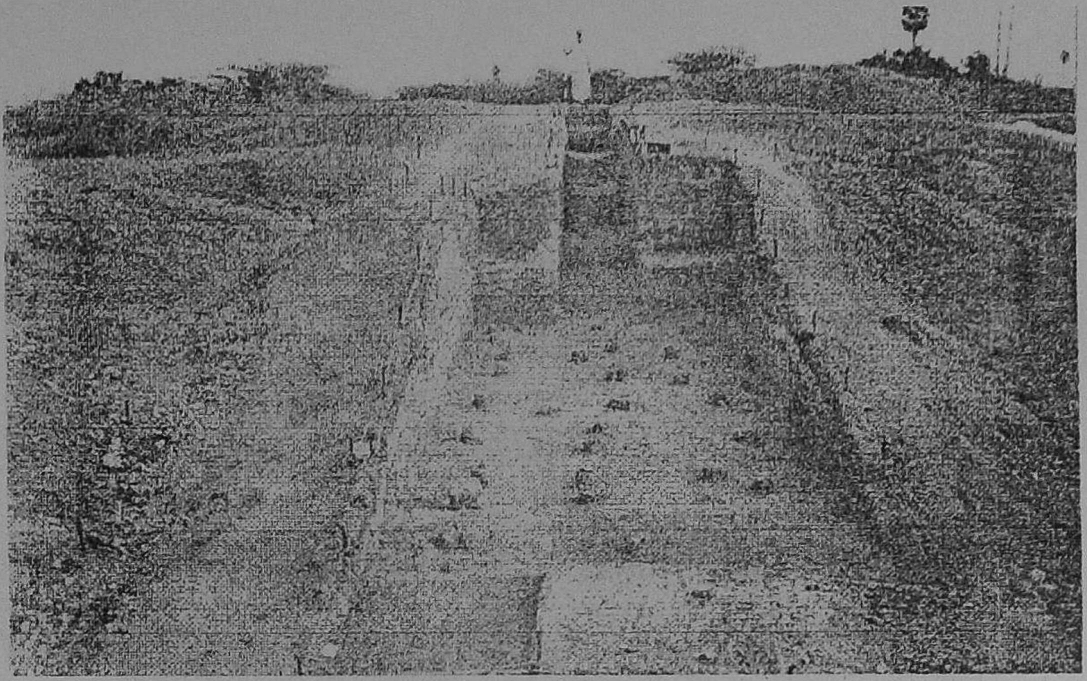
environments and behaviour of these early people. Their story continues into the Neolithic, with the beginning of settled communities and village life, around 3-4000 years ago, a topic by itself as vast and comprehensive as the Palaeolithic. While *these studies do reveal the immense antiquity* of prehistoric communities in this region, it now remains to be seen as to what the future holds.

The study of Indian archaeology *including* prehistory, is today confined to a few *University* departments, even fewer independent organizations and government agencies, many of which are struggling to raise sufficient funding for pursuit of research. Outside of universities, public involvement in the discipline in India, may be on *three levels; a)on an indirect* level, via television programs, *popular media* articles; b) on the level of visits to museums or tourist spots, c) on the level of direct involvement in excavations as a volunteer (a small but growing fraction). Despite this trend, public participation and knowledge of Indian archaeology is often confined to the more 'glamorous' and '*exciting*' aspects of the past, *involving* the Harappan civilization, temple complexes, and what is perceived as archaeological monuments or sites believed to be related to incidents in the great epics of the Ramayana and Mahabharat. On a larger scale, *manipulation of popular sentiments* using archaeology is a growing dangerous *trend in Indian archaeology Where does* this leave prehistory? This early phase of human development, lacking written texts and prior to the development of religion as it is practiced today, leaves little scope for political ideologies and popular imagination.

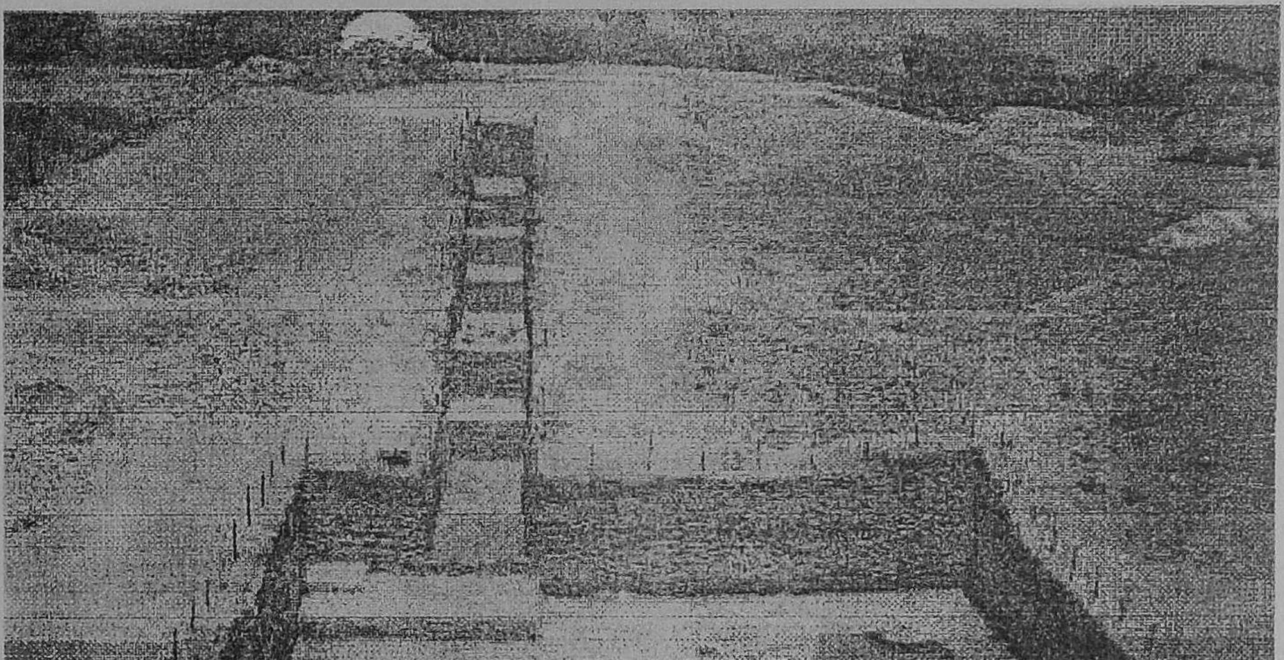
The study of India's *prehistoric* past, as of Indian *archaeology in general*, is a dying discipline. In a growing atmosphere of consumerism, there is little time or place for investigating our heritage, an attitude which will eventually lead not only to the disappearance of aspects of our past, but will also lead to a lack of balance and harmony in society as a whole. *Ignorance of our past or distorted views of Indian* archaeology are a disruptive influence on our national well being, a fact which we are increasingly witnessing every day. As I speak, sites are being rapidly destroyed, by cultivation, construction and random collection by *students and amateurs*.

Political and religious groups are busy manipulating archaeology to suit their own agendas. World over, people are rising to protect and preserve their own heritage, while in India, we are busy demolishing or distorting the last bits which do survive. It is not an excuse to claim that we are developing nation and that heritage issues are a low priority. Other nations have proved that heritage if effectively and aesthetically managed may be a major source of income for local communities. This however lies in the future At present, the efforts of thousands of years of evolution are being ruined through our ignorance. It is time to wake up and preserve the truth about our heritage.

General view of the site of AttiramPakkam



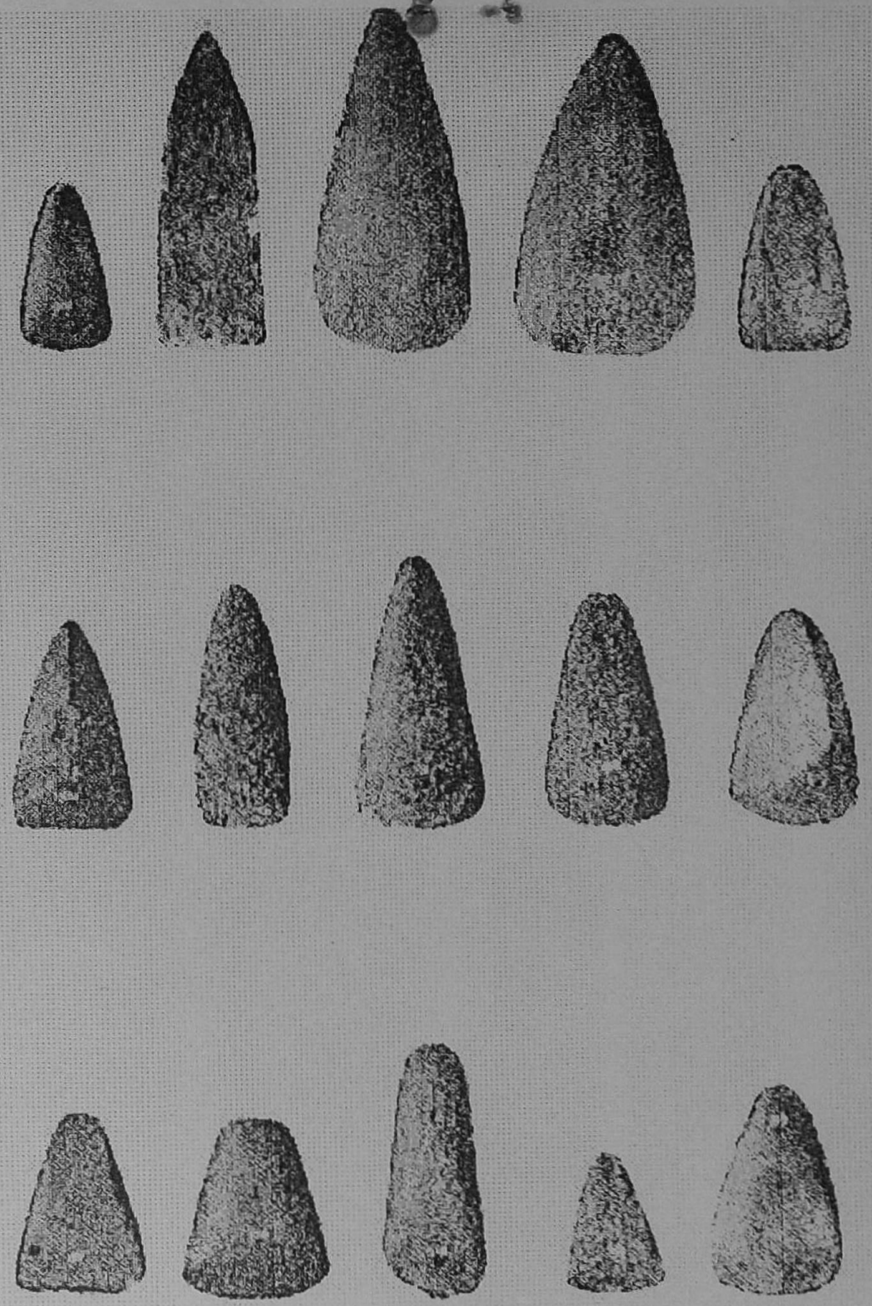
A step-trench at Attirampakkam showing Acheulian tools in the forefront.



The excavated trenches at Attirampakkam.

The first Palaeolithic tool discovered in India (Foote Collection, Madras Museum)

Palaeoliths from South India



Neoliths from South India